DOCUMENT RESUME

ED 433 421 CE 079 093

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TITLE Globalisation and Its Impact on VET. Review of Research.
INSTITUTION National Centre for Vocational Education Research, Leabrook (Australia).
SPONS AGENCY Australian National Training Authority, Melbourne.
ISBN ISBN-0-87397-515-4
PUB DATE 1999-00-00
NOTE 65p.
AVAILABLE FROM National Centre for Vocational Education Research (NCER), 252 Kensington Road, Leabrook, South Australia 5068, Australia; e-mail: ncver@ncver.edu.au; Web site: http://www.ncver.edu.au/
PUB TYPE Information Analyses (070)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Change Strategies; Curriculum Development; *Economic Change; *Educational Change; *Educational Needs; Educational Objectives; Employment Patterns; Employment Qualifications; Foreign Countries; Influences; Information Technology; International Trade; Literature Reviews; Manufacturing Industry; *Needs Assessment; Postsecondary Education; Secondary Education; Staff Development; Tables (Data); *Vocational Education
IDENTIFIERS *Australia; *Global Economy; Impact Studies

ABSTRACT

The impact of globalization on vocational education and training (VET) in Australia was examined through a literature review. Special attention was paid to the following topics: the growing export orientation in Australian industry (industrial growth in Australia's economy, growth in Australian exports, "knowledge intensity" in the manufacturing sector, exports and their impact on employment, significance of foreign direct investment, impact of Australian firms investing abroad, Australia's need for investment); debates about globalization (globalization and distribution of wealth, employment, and change; International Forum on Globalisation; potential benefits of globalization; ideology and globalization; foreign investment and innovation); and implications of globalization for VET (communication evolution and information-based economies; implications of information technology for VET; internationalization of the curriculum; knowledge, skills, and attitudes required by globalization; staff development to address internationalization). Key study findings include the following: VET must contribute constructively to the debate regarding globalization's positive and negative aspects; VET must accommodate the global context in which the world of work now operates; VET must increase its flexibility and development goals and implement strategies that fulfill its clients' needs; and VET teachers/trainers need initial and recurrent professional development to equip them to perform successfully within the global context. (Contains 145 references and 10 tables.) (MN)

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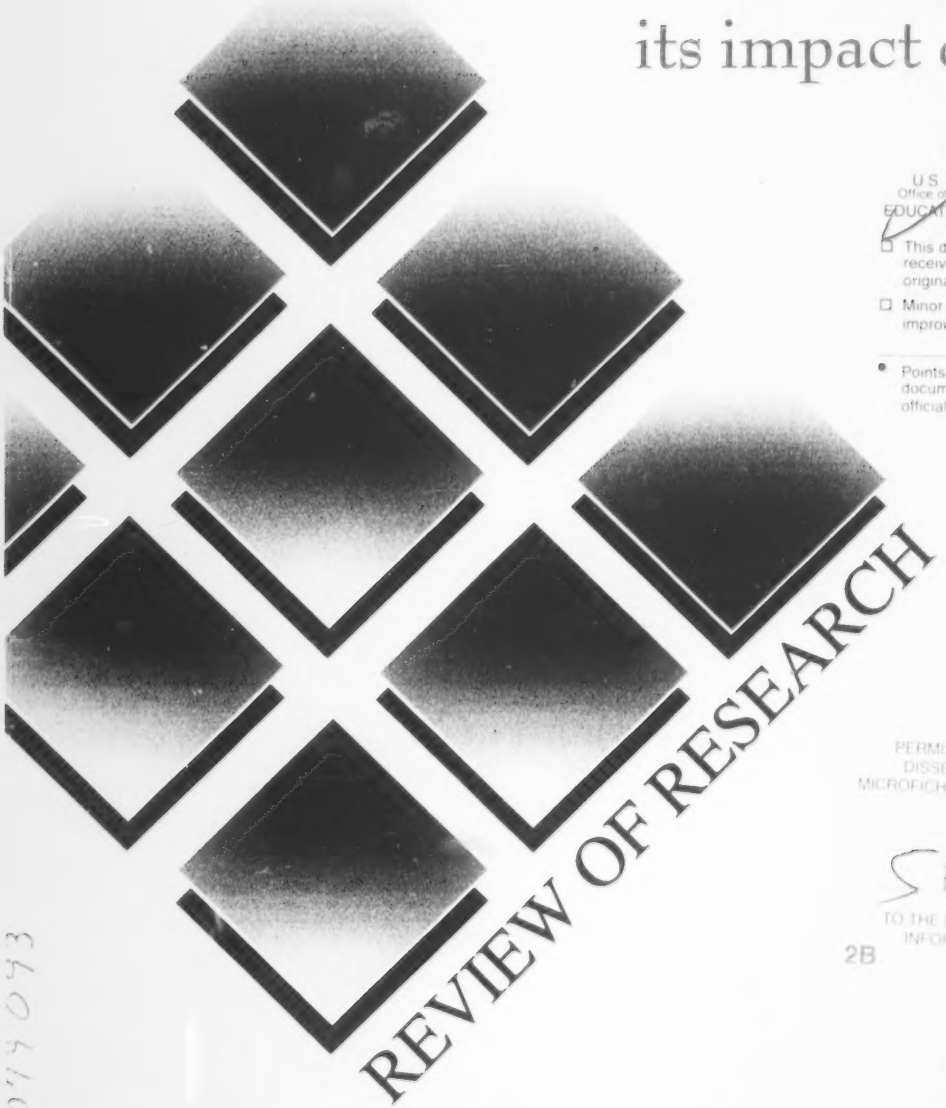

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ISBN 0 87397 515 4
TD/TNC 58.06

Published by NCVER
ACN 007 967 311
252 Kensington Road, Leabrook, SA 5068
PO Box 115, Kensington Park, SA 5068, Australia

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Executive summary

THIS REVIEW OF research and literature gives a general account of internationalisation, or globalisation, and its impact on vocational education and training (VET). It seeks to give an international perspective of the phenomenon termed 'globalisation' and to examine the degree to which the Australian economy and society is experiencing the impact of globalisation and its inevitable impact on VET.

There is a vast array of literature recording the perceptions held by prominent persons of globalisation and its impact on nations, and on the design of VET that is needed to meet this impact. Many consider the term 'globalisation' to be far and away the most prominent in the literature relating to the development of nations and societies today. Considerable debate is recorded with respect to the potential benefits and dangers of globalisation. Much of this debate is underpinned by unstated philosophical tenets and ethical stances. However, while objective research into the impact of globalisation is being pursued more vigorously, the literature still lacks significant substantiation by research of opinions voiced by these prominent persons.

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The review has been written focussing on VET policy makers, curriculum designers, and those responsible for decisions concerning appropriate delivery strategies for VET. Further, it takes particular account of VET delivery in the context of the world of work itself and those that are responsible for the design and/or delivery of this area of VET; such as unions, enterprises, private providers and non-government organisations (NGOs).

The global context of VET is firstly addressed. This seeks to establish the causes for the growing interdependence of nations and, thus, the degree to which education for the world of work (VET) will be constrained in many areas of its responsibilities to heed the developments within the global economy, as well as those within Australia. This is especially true as VET

seeks to export its education, and in so doing, meet its competition through the application of best practice. This section also includes some important definitions.

The significant developments within the Australian economy, especially with respect to exports and investments, are then examined for their implications on employment prospects and the range of competencies that will need to be offered by VET over the coming years.

Having established the nature of globalisation and its development within the Australian arena, a study is made of possible problems and potential benefits of globalisation from the viewpoint of significant leaders around the world and within Australia. This section is designed to alert VET to the areas of globalisation that need to be handled in such a way as to maximise its benefits and minimise its negative impact on the Australian economic and social life.

A section then addresses the specific implication for VET of globalisation in terms of communication, information technology, VET curricula and learning systems and staff development. This is given as a guide to those who are responsible for such enterprises within the VET arena.

Finally, a brief section is given over to the **key conclusions** that can be drawn from the Australian scene and the global scene with respect to the responses that must be made for VET to meet the challenge of the internationalisation, or globalisation, of vocational education and training (VET). In brief they are as follows:

- Globalisation is a phenomenon of major importance that is reshaping almost every economy around the world. Australia is very much a part of this phenomenon.
- It is also a phenomenon, however, that is generating much debate as to its positive and negative aspects, and to those elements of it that should be resisted by nation states. VET needs to contribute constructively to such debate.
- As a consequence of globalisation, economies are increasingly operating in a global market place. This is establishing a high degree of interdependence among such economies. This is also requiring economic units to attain standards that will enable them to succeed in the arena of global competition. These standards of **best practice** are therefore influencing the production, management and employment decisions and practices of both national and international production and services entities.

- For VET to successfully fulfil its role of developing people's relevant competencies for their effective and efficient performance within the world of work, and for sustaining those competencies and their standards of excellence, it must accommodate, to the extent possible, the global context in which it now operates.
- This accommodation will impact on its management structures, its curricula, its teaching/learning strategies, its flexible delivery systems, its articulation with other strata of education, its staff development, and its recognition and accreditation of relevant prior learning and experience.
- Further, globalisation confronts VET with the challenges of exporting education and training for the world of work. To succeed in such endeavours, it must co-operate with necessary change, increase its flexibility and development goals and implement strategies that fulfil the needs of its clients, especially those within its export market.
- The teacher/training personnel of VET must undertake programs of initial and recurrent professional development that equip them to perform successfully within the global context in which they must now operate.
- Current trends in the workplace indicate that businesses and industries are investing heavily in information technology. The only key to success in this less and less predictable workplace will be education in the new information technologies and a willingness of personnel to retrain for changing jobs with the changing technology. VET teacher/trainers have the most crucial role and responsibility to assist this development. They will need continual upskilling and updating on changes and new requirements of the work place so that they themselves can continue to adapt to the rapid change.

Context

THE MOST SIGNIFICANT change today in the context of VET's endeavours stems from the increased interdependence of nations as a result of globalisation. It is, therefore, appropriate to examine the nature of this interdependence.

The growing interdependence of nations

The ramifications of this interdependence are widespread and affect not only the economies of nations, but also their social and political structures. This interdependence also has implications for VET that include the need to facilitate the mobility of workers through curricula and delivery systems that have a global perspective, and the accreditation of prior learning and experience, some of which has been gained in other countries. Further, globalisation has lead to education itself becoming an important export. For this enterprise to succeed VET must initiate courses that can be delivered off-shore as well as courses that meet the needs of people who come to Australia to up-grade their occupational knowledge and skills.

Interdependence through exports

The interdependence of nations is demonstrated most particularly in the increase in the world's exports. This development is seen by a majority of economists as potentially benefiting nations. The following example of the expansion of world trade is an indicator of its contribution to growth. In 1950 the ratio of trade to global Gross Domestic Product (GDP) was 7 per cent. In 1998 it represented 23 per cent. Further, a third of the 25 largest trading countries are now developing countries. Between 1948 and 1997, merchandise trade increased 14 times, while world production increased 5.5 times.

Over the past 10 to 15 years, the share of developing countries in world trade overall has increased from 20 per cent to 25 per cent. For the manufactured sector it has doubled from 10 per cent to 20 per cent, and it is thought that on current trends it could exceed 50 per cent by the year 2020. In this same period of time, ten developing countries with a combined population of 1.5 billion people have doubled their income per head.

While the gap between countries is in some cases widening, it is also true that from 1990 to 1996, developing countries recorded an average growth of 5.4 per cent, three times more than advanced economies. Looking at the whole period between 1820 and 1992 we find that world population grew five-fold, world GDP forty-fold and world trade no less than 540-fold.

Since East Asia accounts for a quarter of world trade, much of the global impact of the Asian crisis will be transmitted through changes in trade flows. By mid-1998, the South East Asian countries most directly affected by the crisis had undergone an import compression in the order of 30–40 per cent, while their exports had stagnated or fallen. Other Asian developing countries have exhibited similar trends, though to a lesser extent. In consequence, world trade, which grew in volume by 9.5 per cent in 1997, the second highest rate in two decades, can be expected to grow much more slowly in the near future. (UNCTAD, 1998)

Australia has maintained its drive for exporting over the past few years. It increased its exports from 1994–95 to 1996–97 by 17.5 per cent. In 1994–95 the total value of its exports was $67 052m and the value of its imports, in the same year, was $74 004m. In 1996–97 the value of its exports was $78 885 while the value of its imports was $78 977. At present Australia exports nearly 25 per cent of its GDP, while the USA exports 8–9 per cent and the European Community 11–12 per cent. (Source: International Trade database, June 1997.)

Interdependence through production sharing

In terms of the interdependence of nations, sharing different stages of manufacturing between countries is of major and growing importance. Global production sharing involves more than $800 billion in manufactures trade annually, or at least 30 per cent of world trade in manufactured products. Trade in components and parts is growing faster than trade in other (finished) products, highlighting the growing inter-dependence of countries in international trade and production operations.

In 1995, OECD exports of parts and components in the key machinery and transportation equipment group, which includes about 50 per cent of world trade in all manufactures, totalled $440 billion. This was about 30 per cent of all shipments (components plus assembled goods) of machinery and transportation equipment.

A different form of production-sharing involves the use of special tariff provisions for the re-import of domestically produced components that have been assembled abroad. Trade in these goods totals about $100 billion annually, with most of the activity involving the European Union and the United States. However, more than 40 per cent of manufactured exports from the Dominican Republic, El Salvador, Haiti, Jamaica, and Mexico involve assembly operations using components manufactured abroad. (Yeats, 1998)

The World Trade Organisation (WTO) sees this development as of considerable value. The Director-General of that Organisation, Dr Renato Ruggiero, states that:

> *This underlines the degree of interdependence we have reached in our world. Clearly, the implications of trade liberalisation go much beyond trade and economics. By lowering barriers among nations, economies and people, it helps create interdependence and solidarity. Trade liberalisation is not just a recipe for growth, but also for security and peace, as history has shown us. Globalisation is about a world linked together by information, knowledge, and ideas as well.*
>
> (Ruggiero, 1998, p.1)

Interdependence through global political and economic institutions

Recent decades have witnessed a considerable expansion in the numbers, roles, and capacities of global political and economic institutions—some more or less technical in character, such as the International Atomic Energy Agency, others more explicitly political. These institutions represent an intensification of decision-making above the level of the nation-state. The United Nations, the World Bank, the International Monetary Fund, and the European Union are some of the more visible and important sets of organisations in an expanding network of authoritative international political entities (Saward, 1995, p.533).

Globalisation is leading to contacts and exchanges between people in all parts of the world beyond the control of state authorities. As a result, a more integrated and interdependent global society is replacing the society of states. It is claimed by some (Samadja, 1996) that this phenomenon has resulted in the independent power of states being restricted in new ways and that the idea that governments have the power to secure the fate of their nation is less and less tenable.

Interdependence through international co-operation

Another important aspect of the interdependence of nations is the significance of international co-operation through supra-national organisations. The interdependence of nation-states is increasingly mediated by formal agreements and the growth of international law. The realm of independent state action is now framed by regional and worldwide rules and standards. In the forefront of this has been the evolution of the United Nations as a fully comprehensive organisation of states. Membership of the United Nations has become almost universal, with North Korea being the only large state not a member by 1994.

International relations are increasingly mediated by international organisations. In 1909 there were 37 inter-governmental organisations (IGOs) and 176 international non-governmental organisations (INGOs). By 1989 there were nearly 300 IGOs and 4624 INGOs (Held, 1995, p.108). The work of these organisations has proliferated greatly.

According to Held (1995) in the middle of the nineteenth century there were, on average, two or three international meetings arranged by IGOs each year. By 1993 this had risen to almost 4000 annual events.

Saward, (1995, p.533) points out that the network of authoritative international political actors is not composed only of governments. Increasingly governments find themselves engaged with supra-national organisations such as the United Nations and the European Union which require compliance with many of their edicts. States thus appear to have passed some of their power upwards to these supra-national organisations, and therefore the scope of their independence has necessarily been reduced. Saward asserts that this tendency

has been exacerbated by pressures from INGOs, such as Greenpeace, Amnesty International or Oxfam, which devote considerable time and effort to calling national governments to account for their failure to comply with international agreements.

Interdependence through the application of best practice

Best practice has been defined as the pursuit of world class standards and performance, describing outcomes in competitiveness and customer focussed products and services. It is a comprehensive, integrated and holistic approach to all operational facets of an organisation. It is also a shared vision of performance supported by a comprehensive change strategy to bring out continuous improvement.

Within the world of work, best practice addresses the role and practices related to industrial relations, to management, and to special groups within the society and to VET. To the extent that the bench marks and strategies for best practice are determined by global standards, national economies become dependent for their efficiencies and competitiveness on the principles and practices of other countries. This increases the interdependence and inter-relationships among countries.

With respect to best practice in industrial relations Macdonald (1997) pointed out that employers, as the force driving economic changes, and their organisations have to take the initiative to develop a reform agenda which can deliver the potential benefits of globalisation.

The ILO (1996) addresses the problems relating to best practice and management. Research undertaken by the Organisation of Enterprises (1998) reveals employers' organisations are identifying and sharing, to some degree, national and international best practice.

International and national bodies that address special concerns relating to the world of work are increasingly exchanging information in order to develop best practice in their respective spheres. These special concerns relate to women in the workforce, the disabled in employment, industrial health and safety, the culturally vulnerable, which include indigenous and ethnic minorities, migrants etc.

ANTA (1998, p.5) perceives that the over-arching challenge for Australia in the context of globalisation today is to create the world's most innovative and best regarded vocational education and training sector. That is, to demonstrate best practice in the VET arena. To achieve this, it believes that the following must characterise our society:

- Australian citizens place a high value on vocational education and training because of the vital role it plays in the social and economic progress of the nation.
- Australian industry plays a leadership role in the vocational education and training sector. Industry and each industry sector believes that training is an investment, not simply a cost. Industry recognises that vocational education and training is a key instrument in maintaining and improving both enterprise and national competitiveness.
- Australian employers of all sizes and across all industry sectors make substantial investments in a skilled workforce by providing both formal and informal training opportunities for their existing employees and to young people entering the workforce.
- Australian workers want, throughout their working life, to update their vocational skills and to acquire new ones. They are active learners and are willing to make a personal contribution and commitment to their own education and training.
- Australian governments are committed to a goal whereby all young Australians are able to access post-secondary education and there are expanded opportunities for adults to pursue further education and training.
- Australian vocational education and training providers are responsive to the changing needs of all clients, industry and individuals alike.

- Australian schools offer a comprehensive and relevant program of vocational education to all their students and, to do this, establish partnerships with parents, industry and vocational education and training institutions.
- Australian school students freely choose their secondary and post-secondary education and training options based on accurate and balanced career and course information.
- Considerable emphasis has been placed on the need to establish benchmarking and principles of best practice within the Australian employment and training scene. The Australian National Training Authority, the Office of Training and Further Education in Victoria, the New South Wales Department of Education and Training, and many other national bodies intimately related to the world of work have established procedures to encourage the development of best practice.

TAFE South Australia in its Intersectoral Relations and Special Initiatives Branch includes best practice and benchmarking in its goals. (Details of these activities can be obtained through the Internet at www.tafe.sa.edu.au.)

Definitions and scope of the topic

To a certain degree, globalisation is not a new phenomenon, either for Australian firms or for the world economy.

In the mid 19th century, the Bank of New South Wales established branches in London, CSR invested in the sugar industry in Fiji, and Burns Philp established operations in a number of Pacific countries (Industry Commission, 1996). At that time, world barriers to trade were falling, transport and communications technologies were developing rapidly and trade and capital flows were increasing. The East India Company of Great Britain was a prime example of globalisation of trade and production in the nineteenth century.

During the decades following World War II, industrialised countries enjoyed a period of exceptional economic growth and social peace, while developing countries made, on average, historically unprecedented economic and industrial progress (Singh, 1994). Nevertheless, despite a strong expansion of world trade, such developments essentially took place within the context of domestically organised industries. This was also true in Australia.

On the world scene, the 1970s and following decades witnessed a number of structural transformations affecting the organisation of industrial activities, both within and between firms. The world's largest companies have expanded far beyond their original national markets. Some have become multinational companies (MNCs), still strongly based in one country but operating in many others. Others have evolved beyond this stage to become trans-national companies (TNCs) which have no strong allegiance to any state and treat the whole world as a single marketplace. Big business has outgrown its home bases and become stateless. Such well-known companies as Ford, General Motors, Shell, Toyota, Volkswagen, Nestle, Sony, Pepsico, Coca Cola, Kodak, Xerox, and many others, have more economic power at their disposal than the majority of countries in the world (Sklair, 1993:7).

What Is Globalisation?

Globalisation refers to the increasing integration of both firms and economies as international flows of trade, investment and financial capital grow.

Globalisation means that individual firms are no longer competing with a limited number of product or service providers, but with all other firms in the world economy.

The United Nations Conference on Trade and Development (UNCTAD, 1997b) suggests that 'the concept of globalisation refers both to an increasing flow of goods and resources across national borders and to the emergence of a complementary set of organisational structures to manage the expanding network of international economic activity and transactions'.

The Bureau of Industry Economics (BIE), (1995, p.2) argues that the term 'denotes the increasing interdependence of international markets' and that 'it relates to the strategies of corporations and governments, the competitive environment, the nature of international markets and so on'.

Laxer (1998, p.287) sums up his concept of globalisation when he says:

> *When we hear a word repeated often from enough credible sources we begin to believe that it must have validity. A kind of mass contagion occurs. If someone were to tabulate the top 40 words used today on the political newspeak charts, 'globalisation' would be at or near the top. 'Globalisation' is a short form for a cluster of related changes. (1) Economic changes that include the internationalisation of production, the harmonisation of tastes and standards and the greatly increased mobility of capital and of transnational corporations. (2) Ideological changes that emphasise investment and trade liberalisation, deregulation and private enterprise. (3) New information and communication technologies that shrink the globe and signal a shift from goods to services. (4) Finally, cultural changes that involve trends toward a universal world culture and the erosion of the nation-state.*

The Harvard School of Business (1998, p.1) states:

> *As the twenty-first century approaches, executives find themselves doing business in a global neighbourhood. They no longer speak the language, share the culture, or occupy the same continent as many of their customers ... or even many of their employees. Now that economies throughout the world are linking and barriers lifting, the borders that once separated countries have become gateways to a wider marketplace.*

The next concept that must be clarified in this paper is what is meant by the term 'Vocational Education and Training' (VET).

What is included in vocational education and training?

The concept of vocational education and training (VET) is addressed in the publication by NCVER (July 1997, p.3). It states that '... it is often difficult to determine precisely where either the intersectoral or the national-state boundaries of vocational education and training lie'. Further, while it is acknowledged that most vocational education and training in Australia is provided by TAFE institutions, there are also other significant providers, for example:

- private commercial providers specialising in VET
- adult community education centres
- higher education institutions
- industry-based training centres and individual company training centres
- secondary schools

With such a breadth of contributors it would seem most helpful to view vocational education and training in the broader sense of education and training that prepares people for the world of work, and maintains their effectiveness and efficiency within it.

Conclusions

It can be seen from the above that the interdependence of nations brings with it both positive and negative outcomes. Even the positive outcomes of increased wealth can result in negative consequences if that wealth is not distributed in equitable ways. It is patent that some of the negative effects of the interdependence of nations are part of a transition process. Nevertheless, those who are caught in this transition time may be hurt. A major contributor to buffering these transitional adverse effects is the availability of flexible VET programs that permit the changing and up-grading of the knowledge and skills related to the world of work.

The growing export orientation in Australian industry

IT IS GENERALLY perceived by Australian economists and the Australian Government that continued globalisation is expected to provide expanding export opportunities for Australian industries as well as maintain pressure on them to become more internationally competitive and meet greater import competition. It was believed at the beginning of this decade that a key stimulus to export performance would be the ongoing integration of the Australian economy into, what was then, the quickly growing Asian region. The decline in the strength and growth of the economies in the Asian region at present, however, necessitates a revision of that expectation, at least in the short term. However, the latest indicators in 1999 show that some revival of the Asian economies is already occurring, especially in South Korea.

DEETYA (1998) anticipates that, in spite of the present economic difficulties stemming from the Asian crisis, employment will grow across most industries, and that the pattern of employment growth will continue the trends of the last two decades, with growth occurring more strongly in service sector industries. These industries include the finance, health, personal services, retail and accommodation and restaurant industries. This anticipation seems correct in terms of the increasing employment in early 1999.

Employment is projected to grow more slowly or fall in many of the manufacturing industries, in part because of the need to become more internationally competitive. One way by which this competitiveness can be achieved is to increase labour productivity, which in turn would act to reduce the rate of growth of employment opportunities. Other industries such as electricity, gas, water and transport are also projected to increase labour productivity substantially through the impact of micro-economic reforms.

In terms of the impact of the Australian economy on vocational education and training, it is important to estimate, as far as is possible, the potential growth of the economy over the next half decade, especially in terms of the impact of globalisation on the pattern of that growth as well as its extent. This estimation gives some insight into the potential increase in employment, and the change in skills that will be needed within employment. The following makes a brief analysis of the estimates that are relevant to this prognosis.

Industrial growth in the Australian economy

A useful starting point in analysing the changes in composition in Australia's industrial structure in recent years, is an examination of the on-going trends in industry output. The analysis in table 1 below investigates both the general changes that are occurring at the broad sectoral level and the relative performance of the industries within these sectors. These trends caused the manufacturing and agriculture sectors' shares of overall gross output to decline over the two decades studied. At the same time the mining and services sectors' share of output rose significantly (table 2).

The most dramatic of these changes appears to have occurred in the manufacturing sector, which has experienced a consistent reduction in its output share over the last two decades, with an overall decline of almost 5 percentage points in the period between 1975 and 1997. Longer time period data, however, indicates that this has not always been the case. The sector's share of GDP grew steadily up until around 1960 (reaching 26 per cent in 1962–63) and fell steadily thereafter.

Table 1: Average annual growth rate of GDP by major sectors (constant prices), 1975 to 1997

	1975–1985 %	1986–1997 %	1971–1997 %
Agriculture, forestry and fishing	1.69	2.17	1.78
Manufacturing	1.63	2.06	1.75
Mining	3.88	4.29	3.38
Total Services	3.10	3.72	3.66
Total GDP	**3.03**	**3.39**	**3.14**

Source: ABS 6205.0 and DIST calculations

Table 2: Gross output shares by major sector, for selected years

	1975 %	1980 %	1985 %	1990 %	1993 %	1997 %
Agriculture, forestry and fishing	5.1	4.2	4.5	4.1	4.3	3.8
Manufacturing	18.1	17.9	15.8	15.0	14.2	13.4
Mining	3.9	3.4	4.2	4.4	4.3	4.3
Total Services	**66.0**	**66.5**	**66.5**	**67.8**	**67.8**	**69.5**

Note: The percentages in this table do not add to 100 per cent as the classifications exclude: ownership of dwellings; and import duties, that are included in total GDP.

Source: ABS 6205.0 and DIST calculations

International data also indicates that the recent fall in the output share of manufacturing is not unique to Australia. The shares of manufacturing output have fallen in most industrialised countries, with the OECD average share falling from 28.3 per cent of GDP in 1970 to 20.6 per cent in 1993. In line with other resource-based economies, such as Canada and New Zealand, the Australian manufacturing industry's GDP-share has been consistently below the OECD average in recent years.

These trends contrast with those of the major Asian economies such as Hong Kong, Indonesia, South Korea, Malaysia, Singapore, China and Thailand. These countries have generally experienced strong rises in the relative importance of their manufacturing sectors in recent years (although the current Asian situation may have impacted on this trend, at least in the short term).

It is thought that the expansion of the service sector's share of Australian GDP over the period studied above is probably associated with factors such as the increasing female workforce participation rates, the increasing number of two income families in recent years and demographic changes such as the ageing of the population. These trends have been associated with lifestyle and market changes, which have resulted in an increasing demand for services. (DIST, 1998).

As the changing patterns in Australia's trade are one of the key elements driving the structural change that has occurred in the Australian economy in recent years, table 3 gives an indication of the composition of that trade in 1996–1997.

With respect to employment, it is notable that high output growth does not necessarily lead to significant increases in employment. Of the four industries identified as having the highest output growth between 1987 and 1997, only two (air transport; and property and business services) consistently maintained relatively high employment growth over the period and only one (property and business services) has experienced average employment growth at or above the real rate of growth in its output. The industry with the highest output growth between 1987 and 1997, communication services, has seen a negligible change in its employment levels (DIST, 1998).

Table 3: Composition of trade in the Australian economy 1996–97

	Agriculture	Mining	Manufacturing	Services	Total
Production					
Level ($m)	18 064	19 169	61 548	307 620	445 101[b]
Industry share (%)	4.1	4.3	13.8	69.1	
Annual growth (%)	13.0	2.3	1.4	2.6	2.6
Employment					
Average level ('000)	427	87	1 130	6 719	8 363
Industry share (%)	5.1	1.0	13.5	80.3	
Annual growth (%)	1.2	1.6	1.7	0.8	0.9

Growth in Australian exports

The value and share of goods exported from major industry sectors in the financial years 1986–87 and 1996–97 are outlined in table 4. While the trade figures are provided in **current prices**, the growth rates indicated have been calculated in constant prices to demonstrate the **average real growth** in exports from these industries.

The growth in exports has been more rapid than output growth for all sectors (with an average real growth of 7.7 per cent a year since 1986–87), indicating an increased propensity to export throughout the economy (see table 4). This is particularly the case for the manufacturing and services sectors. With average real growth in exports of over 9 per cent a year in both these sectors, it appears they are becoming much more outward looking.

Table 4: Total exports of goods and services by sector: 1986–87 and 1996–97

	1986–87		1996–97		Growth
	Value ($m)	Share %	Value ($m)	Share %	%
Agriculture	**6 167**	**14.1**	**10 763**	**10.4**	**3.3**
Agriculture	6 141	17.2	10 125	12.8	2.7
Forestry & Fishing	26	0.1	638	0.8	34.5
Mining	**9 475**	**21.7**	**17 895**	**17.3**	**5.0**
Coal mining	5 431	15.2	7 968	10.1	2.8
Oil & gas extraction	1 108	2.8	3 778	4.8	12.2
Metal ore mining	2 905	8.1	5 939	7.5	5.1
Other mining	122	0.3	213	0.3	4.0
Manufacturing	**18 962**	**43.5**	**48 434**	**47.0**	**9.4**
Food, beverages & tobacco	5 678	15.9	11 011	14.0	5.2
TCF & leather	1 355	3.8	2 816	3.6	9.4
Wood & paper products	407	1.1	1 044	1.3	5.7
Printing & recorded media etc	200	0.6	409	0.5	10.0
Petroleum, coal, chemical etc	1 422	4.0	5 367	6.8	5.1
Non-metallic mineral product	77	0.2	377	0.5	15.5
Metal product	6 280	17.5	14 697	18.6	9.7
Machinery & equipment	3 141	8.8	12 006	15.2	16.7
Other manufacturing	402	1.1	707	0.9	13.9
Other industries	1 203	3.4	1 790	2.3	7.3
Services	**7 792**	**17.9**	**24 257**	**23.5**	**9.3**
Total	**43 598**	**100.0**	**103 142**	**100.0**	**7.7**

a Average annual growth rate over the period 1986–87 to 1996–97, in constant prices.
b The sum of the items does not add to the total due to the exclusion of some confidential items and 'other industries' data.

Source: International Trade Database and Balance of Payments data, as reported in the ABS Yearbook, and DIST calculations.

In terms of relative size, the manufacturing sector provided the biggest contribution to Australia's goods and services exports in 1996–97 ($48.4 billion) followed by the services sector ($24.3 billion). With the relatively healthy export growth in these two sectors, their shares of total exports have also risen significantly in recent years.

While exports of agricultural and mining products have also grown over the period, this growth has not been as healthy as that achieved by the other sectors and their shares of overall exports have fallen to 10.4 per cent and 17.3 per cent respectively. It appears Australia is becoming increasingly less reliant on the more 'traditional' exports from these sectors (DIST, 1998).

Indications of Australia's export growth are important to the decisions that must be made for the provision of VET. However, in terms of the type of skill training programs that must be provided, it is important to also determine the level of sophistication of knowledge and skills that is needed. This measure is given by examining the knowledge intensity of the export industry.

'Knowledge Intensity' in the manufacturing sector

A number of studies have undertaken to examine the trends in 'knowledge intensive' industries, although these have tended to relate to the manufacturing sector. Sheehan et al. (1992) classified industries according to their knowledge intensity (based on the proportion of value added spent on research and development) and examined the relative export and research and development performance of the industries in the various categories. Their results are summarised in table 5.

It appears from this table that while much of the growth in Australian manufacturing exports has been in the more knowledge intensive manufacturing industries (high technology industries grew by an average 25.6 per cent a year between 1985 and 1992), there has also been significant growth in most of the other categories examined. The one exception was the resource based manufacturing industries which, despite their substantial contribution to Australia's manufacturing exports, only achieved average annual export growth of 2.4 per cent a year.

The data in this table also indicate that the growth in high technology exports from Australia was having an impact of the export intensity (the ratio of exports to production) on these industries. Although the traditional resource based products still had the highest export intensity, the export intensity of the high technology manufacturing products was increasing and, at 21 per cent, it almost matched that of the resource-based products in 1992.

Table 5: Export and R&D performance of manufacturing industry

	Australian Exports		Export Intensity (1992)		R&D Intensity (1992)	
	Level	Average Annual Growth 1985–92	Australia	OECD	Australia	OECD
		(%)	(%)	(%)	(%)	(%)
High						
Pharmaceutical	275	21.1	14.3	16.1	13.9	22.5
Electronics	680	29.3	27.6	30.3	22.7	20.3
Aerospace	183	21.7	18.5	40.8	8.3	28.4
Total	**1138**	**25.6**	**21.2**	**30.2**	**16.5**	**22.3**
Medium-high						
Professional goods	245	6.6	22.9	33.5	7.9	13.3
Motor vehicles	776	11.7	10.4	30.4	5.0	13.2
Chemicals	986	12.5	12.6	29.5	2.9	9.1
Elect. machinery	355	18.6	7.4	21.0	2.7	6.8
Total	**2362**	**12.2**	**11.2**	**28.6**	**3.8**	**10.5**
Medium-low						
Non elec. machinery	806	17.2	19.4	26.8	4.2	4.5
Other trans. equip	10	6.5	3.1	36.8	16.3	6.5
Ship building	241	39.5	19.0	27.2	15.2	1.6
Non metallic Mineral	151	18.9	2.8	10.3	1.2	2.4
Other mfg	267	21.6	27.1	15.3	12.0	1.7
Rubber & plastics	160	24.6	3.3	11.0	2.8	3.2
Total	**1635**	**20.5**	**9.6**	**19.8**	**4.4**	**3.5**
Low						
Iron & steel	870	8.6	12.5	13.3	5.4	2.4
Metal products	487	17.0	5.7	13.0	2.4	1.4
Paper & related	297	14.6	2.7	9.8	0.6	0.8
Textiles & leather	190	11.0	27.2	20.9	0.4	0.8
Wood & furniture	479	12.7	8.4	11.3	0.4	0.5
Total	**2323**	**11.5**	**10.3**	**13.4**	**1.6**	**1.1**
Resource based						
Food, bev., tobacco	6163	6.4	22.9	10.5	1.0	1.1
Petroleum refining	1095	-3.7	14.4	7.9	6.8	5.7
Non-ferrous metals	2890	-1.3	35.4	18.6	2.5	3.2
Total	**10 148**	**2.4**	**23.8**	**10.7**	**3.2**	**1.9**

Source: P.J. Sheehan, Nick Pappas, Galina Tikhomirova, Paul Sinclair *Australia and the Knowledge Economy: An Assessment of Enhanced Economic Growth Through Science and Technology.*

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Table 6: Change in Australian manufacturing exports by technology intensity (1986–87 prices)

Technology Intensity	Industry	Exports		
		1986–87 ($m)	1995–96 ($m)	Average Growth (%)
High	Aerospace	491.3	849.9	6.3
	Computers	390.0	2 275.3	21.6
	Pharmaceuticals	166.3	801.3	19.1
	Electronics	87.7	920.6	29.9
	Instruments	176.6	649.2	15.6
	Elec. machinery	255.5	1 666.7	23.2
	Total	**1 567.4**	**7 163.0**	**18.4**
Medium	Motor vehicles	438.2	1 433.6	14.1
	Chemicals	257.2	784.3	13.2
	Machinery	863.8	3 838.0	18.0
	Rubber and plastics	185.0	585.3	13.7
	Other manufacturing	325.7	1 004.1	13.3
	Total	**2 069.9**	**7 645.3**	**15.6**
Low	Other transport equip.	7.9	179.7	41.6
	Stone, clay, glass	274.4	358.2	3.0
	Petroleum refining	820.3	1 408.7	6.2
	Shipbuilding	77.5	518.8	23.5
	Non-ferrous metals	2 311.7	4 312.3	7.2
	Ferrous metals	5 684.0	9 532.7	5.9
	Paper, print, publishing	131.5	258.9	7.8
	Food, beverages, tobacco	7 826.3	13 066.4	5.9
	Textiles, footwear, leather	4 824.8	2 270.6	-8.0
	Total	**21 958.4**	**31 906.3**	**4.2**
All Manufac.	**Total**	**25 595.7**	**46 714.6**	**6.9**

Source: ABS 5434.0 and 5422.0; DFAT Composition of Trade Australia 1995-1996.

From the research and development intensity figures, it appears that the relative level of research and development being undertaken in Australia may be having some bearing on this performance. Although Australia appeared to

be matching the research and development performance of the OECD countries in the low technology and resource based industries, it was not generally matching the level of research and development expenditure in OECD countries. The relative performance in some industries (for example, electronics, ship building, and other transport equipment), however, more than matched the OECD average and this should bode well for the future of these industries.

Sheehan's work was based on 1992 data. The export growth figures have been updated in table 6 (although the industry split used on this occasion is slightly different).

This data appears to indicate that in more recent years, the high technology industries have continued their relatively strong export growth, with these industries experiencing average real growth of 18.4 per cent a year. While it is not shown in this table, this is likely to have impacted on the export intensity of these industries (particularly given the relatively modest manufacturing output growth rates discussed earlier), and may have moved them more towards the OECD averages.

Exports and their impact on employment

Whether global integration stimulates industrial development and jobs creation, and the kind of jobs and activities created in that process that are satisfying and rewarding, will depend on interactions between the global strategies of leading firms that drive the development of transnational networks, and the ways in which local firms, workers and institutions respond to the opportunities and constraints generated by this global environment.

Some features of employment practices that have developed from globalisation, such as the growing use of performance-based pay, also introduce an element of precariousness in the gains that workers derive from industrial upgrading, by shifting a greater share of business risk from the firm to the workers. Such gains might also spread unequally among different categories of workers that contribute in various ways to the upgrading process. Statistics show us that globalisation can significantly increase the potential for a country to generate wealth. This means that more countries can enjoy economic growth, provided that it is properly organised and that growth is appropriately distributed.

The significance of foreign direct investment

A major force shaping globalisation is foreign direct investment (FDI). This type of investment gains its significance with respect to globalisation and the interdependence of nations from the fact that it implies that the investor exerts a significant degree of influence on the management of the enterprise resident in the other country (UNCTAD, 1997). Foreign direct investment is becoming increasingly important in delivering goods and services to foreign markets.

Table 7 shows how growth in foreign direct investment has been outstripping world production and trade performance over the last ten years. This gives an indication of the increasing interdependence of nations and, therefore, the increasing degree to which nations, including Australia, will be subject to economic developments in other nations. These links with South East Asian nations will be especially significant to Australia.

Table 7: FDI, GDP and Trade: annual growth rates (per cent)

	1986–90	1991–96	1995	1996
FDI inflows	24.4	17.1	32.6	10.3
GDP at factor cost	10.7	6.4	9.5	6.6
Exports of goods and non-factor services	14.3	7.4	16.2	4.5

Source: UNCTAD, World Investment Report, 1997

Between 1982 and 1994, the world wide stock of foreign direct investment increased fourfold, and doubled as a percentage of world gross domestic product. In 1996, world foreign direct investment stock reached $3.2 trillion and foreign investment inflows increased by 10 per cent. In the same year, world gross domestic product increased by 6.6 per cent and international trade by 4.5 per cent (UNCTAD, 1997a).

Australia's position

Australian firms focussing on the development of more efficient and internationally competitive industries have been active participants in the world growth of FDI. While Australia remains a small player in the international arena, trends in Australian FDI have been broadly in line with world trends and responsive to changes in economic conditions.

Table 8: Foreign direct investment stocks: Australia, 1980–96 (selected years)

	1980	1985	1990	1994	1995	1996
Inward ($ billion)	13.2	25.0	76.4	91.1	107.4	123.9
Share of world (%)	2.7	3.4	4.4	3.9	3.7	3.8
Outward ($billion)	2.3	6.7	30.1	35.9	41.5	46.0
Share of world (%)	0.4	1.0	1.8	1.5	1.51	1.4

Source: UNCTAD, World Investment Report, 1996 and 1997.

Table 8 shows that Australia's stocks of inward and outward FDI have increased significantly since 1980 with a dramatic increase in the decade of the 1990s.

Inflows and outflows

Those data which are available show that, during the 1960s and 1970s, annual Australian Direct Investment Abroad (ADIA) averaged less than $200 million and less than 0.5 per cent of GDP. In the 1980s, however, outflows increased considerably, reflecting both Australian and international trends towards deregulation and liberalisation of financial markets. In 1987–88, outflows peaked at around $10 billion, or 3.4 per cent of GDP, and, for the first time, exceeded inflows. Subsequently, and in line with the downturn in world economic conditions, outflows were reduced but recovered again to average $4.6 billion or 1.1 per cent of GDP in the three years to 1994–95. At 30 June 1996, stocks of ADIA were almost $58 billion (IC, 1996).

Destination of overseas investment

In line with trends in other developed countries, the destination of Australia's investment abroad remains concentrated in our more traditional markets. The bulk of Australian direct investment abroad is in the United Kingdom (33 per cent of the stock), the United States (26 per cent) and New Zealand (14 per cent) (ABS, 1995–96).

Despite our increasing trade orientation with East and South East Asia, ASEAN countries accounted for less than 6 per cent of ADIA stock at 30 June 1995. This share has fallen substantially since the early 1980s. Over the same period, Australian investment in other OECD countries, and particularly those in Europe and North America, has increased rapidly (IC, 1996).

Composition of overseas investment

Again in line with world trends, there has been a shift in the sectoral composition of ADIA away from mining and manufacturing industries and towards service industries. Direct investment is often the only approach to internationalisation of services. Services are generally less tradeable, and less traded as final products; and intermediate services tend to be embodied in goods trade.

At the end of 1994–95, 14 per cent of ADIA stock was in mining, 38 per cent in manufacturing and 48 per cent in services. Between 1985–86 and 1994–95, the ADIA stock increased by nearly $40 billion, of which 46 per cent was attributed to the service sector and 43 per cent to the manufacturing sector (IC, 1996).

Inward investment

The data available on foreign investment in Australia are even more limited than the data on Australian investment abroad. However, as table 9 shows, while Australia has traditionally been a net capital importer, the gap between foreign investment inflows and outflows has narrowed considerably since the early 1980s.

At 30 June 1996, the United Kingdom accounted for 26 per cent of Australia's inward investment stocks, the United States for 28 per cent and Japan for 12 per cent.

Table 9: Foreign direct investment flows: Australia, 1965–95

At 30 June	1965	1970	1975	1980	1985	1990	1995
FDI inflows ($m)	540	736	657	1 538	2 615	7 489	8 158
ADIA outflows ($m)	32	129	94	391	1 743	2 355	4 709

Source: Industry Commission, based on Australian Bureau of Statistics data.

The impact on Australia of firms investing abroad

While foreign investment outflows from Australia have increased substantially in recent years they remain small by world standards and Australia continues

to be a net capital importer. Nevertheless, there are concerns that foreign investment by Australian firms is undertaken at the cost of domestic investment and that it imposes costs on the economy in terms of employment and revenues.

A report by the Bureau of Industry Economics (1995) analysed these impacts. The BIE's views were similar to those put forward by the Industry Commission (1996) in its report, *Implications for Australia of firms locating offshore*.

Foreign investment and employment

A key area of public concern is the extent to which the relocation of production facilities overseas will reduce employment in Australia and lead to an erosion of our industrial base. The BIE found that most (mainly overseas) empirical evidence showed that foreign investment had either no effect or a positive effect on domestic production and employment.

The key factor determining the impact on employment is the underlying motive behind the decision to produce overseas. In some circumstances, profitable expansion may only be possible through foreign investment. For example:

- Australian firms which undertake relatively non-exportable activities have limited opportunities for achieving growth through trade.
- Firms which have a significant share of the domestic market may have limited further opportunities for growth domestically.
- The rate of return on Australian-based investment may be low relative to investment in other countries.

In all the above circumstances the ultimate choice may be between investing overseas and not investing at all. In these cases overseas investment is unlikely to impact adversely on Australian employment. However, there will be situations where investment by Australian firms overseas does have a negative impact on domestic employment. Even in these cases there may be offsetting gains—for example, if new firms enter the market in place of the multinational or if the international investment was made to access lower cost or higher quality inputs and results in a more competitive product and a more profitable Australian firm.

In those cases where the decision to invest overseas is made on a sub-optimal basis—for example, where it is influenced by the existence of incentives offered by foreign governments or by restrictions on trade—there may also be

a negative impact on domestic employment. Here, however, the negative impact results from the trade distortions, not from the foreign investment itself.

Further, where the overseas investment is undertaken to access low cost labour, the quality of the skills base of Australian employees may in fact be improved if Australian production is refocussed towards more highly skilled activities.

Australia's need for investment

While the recent rapid globalisation of firms and industries has highlighted the need for Australian businesses to become more outward looking, the importance of foreign investment to Australia's growth and development has long been recognised. Foreign direct investment in Australia not only supplements domestic savings and provides scope for higher rates of economic and employment growth, but, as with Australian investment abroad, it also provides access to new technology, management skills and overseas markets.

The significance of foreign investment

Australia has a high share of foreign direct investment, by both world and developed country standards. In 1995, foreign direct investment as a share of gross fixed capital formation was 20 per cent in Australia, compared with 4.4 per cent in developed countries and 5.2 per cent for the world as a whole. For the period 1985–1990, the comparable annual average figures were 11.2 per cent, 5.5 per cent and 5.4 per cent, respectively (UNCTAD, 1997a).

As a consequence, foreign enterprises play a significant role in the economy. In 1986, they accounted for 32 per cent of Australia's manufacturing production and almost 24 per cent of manufacturing employment; shares exceeded in OECD countries only by Belgium, Canada and Ireland (OECD, 1996).

This reliance on foreign investment reflects, to some extent, our low domestic savings rate and consequent limited availability of domestic capital for investment. However, it is important to recognise that, even if our level of national saving was comparable to that of other developed countries, the combination of our resource endowments, population base and infrastructure needs would most likely require us to be capital importers.

Table 10: Australia's major markets for merchandise exports

Country	1996–97 ($ million)	Share of merchandise exports %	Average annual growth 1985–86 to 1996–97 (current prices) %
Japan	15 373	19.5	4.7
Republic of Korea	7 129	9.0	16.6
New Zealand	6 177	7.8	13.7
United States	5 517	7.0	5.0
Taiwan	3 620	4.6	11.8
China	3 581	4.5	8.3
Singapore	3 396	4.3	15.0
Indonesia	3 308	4.2	18.3
Hong Kong	3 096	3.9	14.1
United Kingdom	2 354	3.0	6.7
Malaysia	2 325	2.9	14.7
Thailand	1 690	2.1	23.6
India	1 491	1.9	12.0
Italy	1 351	1.7	6.3
Papua New Guinea	1 270	1.6	7.7
Other	17 207	21.8	5.7
Total	**78 885**		**8.3**

Source: ABS Catalogue 5422.0 and DIST calculations

Foreign investment, growth and employment

While investment per se is critical for economic and employment growth, foreign direct investment has the potential to confer significant additional advantages on firms and countries. Many of these advantages are similar to those described in the previous section as benefits accruing from Australian investment abroad.

The OECD (1996, p.3) argues that:

> *International investment brings greater efficiency, enhanced structural adjustment and greater opportunities to participate in growth. International firms have organisational and technological advantages, and tend to be more efficient. They also tend to operate in more advanced industries and are leaders within their*

industries, hastening technological and structural change within countries, and, through international linkages, widening growth opportunities.

Australia's top fifteen markets for merchandise exports in 1996–1997 are listed in table 10. Japan is our major overseas market for merchandise products, accounting for 19.5 per cent of exports in 1996–97. The Republic of Korea, New Zealand and the United States and Taiwan, however, are also important markets. Collectively, these markets accounted for around 48 per cent of total merchandise exports in 1996–97.

Conclusion

Globalisation is a natural extension of the international process of specialisation. It allows countries with large populations and relatively low wages to specialise in more labour intensive activities, and countries with higher wage costs to focus on developing more efficient ways of using their labour. It also allows firms, particularly those with relatively small domestic markets, to increase their efficiency through economies of scale. Further, as investment funds become more internationally mobile, the increased competition in capital markets will encourage both firms and governments to pursue more efficient financial policies in order to attract and maintain investment.

In terms of exports, Australia has been a resource based economy. However, to sustain its growth it must convert more of its resources to finished products through manufacturing processes. This requires that it increase its productivity in this area in order to compete with the increased share of manufacturing that is now enjoyed by the developing countries in its region. This goal of strengthening the manufacturing sector in the Australian economy, and of increasing its efficiency, will require effective national planning including the role of VET in anticipating skill requirements and supporting efforts for the Australian manufacturing sector to develop, implement and support best practice across that sector.

Debates about globalisation

IT IS PATENT from the literature that globalisation is seen as an inevitable economic development for most countries around the world. It is also seen to contain the potential for real economic progress resulting in improved human wealth. On the other hand it contains the potential for serious social conflict within a nation and among nations, if the increased wealth resulting from it is not equitably distributed. Smith and Ferrier (1996) present a comprehensive set of papers that deal with a wide variety of issues that are raised by globalisation, and the positive and negative impacts that these issues can have on various entities within a nation. These issues are addressed in the light of the role of VET. Again, Armstrong (1997) presents a wide range of issues relating to VET and globalisation.

Important issues for debate with respect to globalisation

The following are some of the judgements that have been made by leaders around the world from various institutional and organisational perspectives with respect to the impact of globalisation.

- Unless globalisation is managed well it threatens cultural identity and the preservation of different cultures and their unique differences within a country.
- Because it has considerably increased the mobility of the workforce it can have a destructive effect on the extended family and the support gained therefrom, and on the security felt by being a member of a fairly homogeneous community with traditions and mores that are commonly understood and accepted by that community.
- Through its considerable reliance on greatly enhanced communication technology it has implications for the destruction of different languages

because the English language has become the universal language within much of this vast communication network, especially within the Internet.

- With the considerable increase in migration it has the potential to generate strain in the relationships between parents and children as the parents focus on their national and cultural backgrounds and roots, while the children tend to become integrated into the new society with its different cultural, religious and ethical conventions.
- It threatens the role and importance of unions and the collectivisation of workers that gives them significance in negotiations and decision making and helps to buffer the detrimental effects of hyper-competition and an excessive emphasis on productivity. This is also seen to have ramifications for the quality and security of jobs and the level of rewards gained therefrom. For example, in 1996 the assets of the world's 358 billionaires exceeded the combined annual incomes of countries with 45 per cent of the world's population.
- It may cause the relocation of workers from rural to urban areas within a country or from one country to another that may have disruptive and stressful concomitant personal, social and economic effects.
- It may necessitate job change, uncertainty in career paths and development, and the need to develop new knowledge and competencies. These may be of little interest to the person or demand considerable sacrifice in time and effort with an uncertainty of the lasting value to be gained from such sacrifice. Coupled with this is the fact that the learning programs available to workers for developing new knowledge and competencies are by no means universally available and, thus, some workers are seriously disadvantaged in their efforts to develop the new competencies needed for employment.

  Greer (1998, p.107) recognises this problem in the Australian context when he asks the question: 'How do you provide access to training opportunities to a geographically dispersed and culturally diverse population in a cost effective manner?'

- It may result in extended periods of unemployment, under-employment and precarious employment through the restructuring of the economy, through the relocating of enterprises, through downsizing and through the substituting of technological processes for human employment. (Gelpi, 1998, p.115)
- It may exacerbate inequalities of income and wealth and increase the disparities of wealth among the nations through the spread of multi-national corporations and the endeavours of enterprises to obtain minimal labour costs and maximum competitive advantage.

Globalisation and the distribution of wealth

One of the most important challenges that is registered in the literature is that of containing the social and economic imbalances resulting from globalisation by spreading the costs and benefits of global integration throughout local industries and communities.

Gopinath (1997, p.1), Assistant Director-General of the International Labour Organisation and Director of the International Institute for Labour Studies, claims that the decade of the nineties has been marked by two major trends–individualism and the supremacy of the market. Individualism has changed current notions of social justice, which is seen today less in terms of an equal distribution of material assets, and more in terms of equal opportunity to access knowledge, skills and public goods. Markets have become global and hyper-competitive. While they promise unprecedented prosperity, they lead to disparities of income and wealth, provoke personal insecurity and blur national identity.

Globalisation and employment

Some doubt is expressed in the literature as to effects of globalisation on unemployment. It is claimed that the coincidence of globalisation with unemployment represents an example of political, rather than economic, causation.

These developments have resulted in the society placing emphasis on the 'employability' of employees, as well as employment itself. Ducci (1998, p.40) questions the term 'employability' and asks whether it really is a password for employment. She states that:

> *'Employability' has emerged as the new buzz word to counteract job anxiety. But the term is ambiguous. Is it just a palliative to placate and divert the plea for more and better jobs? Or is it the lever for effectively restoring full employment?*

Globalisation and change

A study of the evolution of the global economy would seem to indicate that change must occur, but that this change must happen in a way that least disrupts the lives of people and causes the least amount of social and personal

tension. This change not only effects personal lives, but also deeply entrenched institutions within our society. (ILO, 1997)

The concept of change and its challenge to every area of life, pervaded the discussion and debate among the participants of the Fifth Theme of the Fifth International Conference on Adult Education (UNESCO/UIE, 1998).

The International Forum on Globalisation

This is a new alliance created by sixty activists, scholars, economists, researchers, and writers to stimulate new thinking, joint activity, and public education in response to the rapidly emerging economic and political arrangement called the global economy. Representing 40 organisations in 19 countries, the International Forum on Globalisation (IFG) have come together out of shared concern that the world's corporate and political leadership is undertaking a restructuring of global politics and economics that may prove as historically significant as any event since the industrial revolution. In its position statement (IFG, 1995, p.2) it advocates 'equitable, democratic and ecologically sustainable economics'. It maintains that the current trends toward globalisation are neither historically inevitable nor desirable.

Some others have significant reservations concerning the benefits of globalisation and the interdependence of nations. They see that these phenomena also lead to high levels of competition that may adversely affect employment and threaten the stability of the social structure. Samadja (1996), for example, claims that globalisation means a new world of international mega competition. This mega competition has one implication—the tremendous and ever-increasing pressure on the cost structure of the corporations.

A similar warning is given by the president of the World Bank, James D Wolfensohn (1998, p.1), when he expresses his concern that the world is in a serious crisis resulting partly from globalisation and the interdependence of nations. He warns that we have:

> *... a human crisis from which the developed world will not be able to insulate itself. A human crisis that will not be resolved unless we address the fundamental issue of the essential interdependence of the developed and the developing world.*

A human crisis that will not be met unless we begin to take a holistic approach both to development and to how we respond to the crisis–looking at the financial, the social, the political, the institutional, the cultural, and the environmental aspects of society—together.

These fears are countered by others. Treanor (1998, p.121) states: 'There is no collapse of the nation state, in the face of globalisation. *Nothing has happened to nation states, comparable to the dissolution of the Austro-Hungarian or Ottoman empires.* "Globalisation" remains a hype.'

The potential benefits of globalisation

On the other hand, the positive realities of globalisation can be seen in the fact that it has been the outward-oriented countries which have created the most employment in the last 25 years. Free-trade-based Hong Kong has created more jobs and shows a sharper rise in living standards than any protected economy in the world. China has created perhaps 100 million new jobs in the past 15 years since it opened its economy. The United States is also generating jobs. Since the beginning of the Clinton administration, the United States' economy has created about 9 million net new jobs, that is new jobs minus the loss of old jobs. It is perceived by the majority that globalisation is the product of a series of technological innovations and political changes that are more than likely irreversible, and probably, most are beneficial.

Ideology and globalisation

Mathews (1998, Module Three, p.2) states that 'Not much is more a part of the 'foundation' in the life of a community than its ideology'. He defines "ideology" as 'that group of ideas fundamental to a political and economic system'.

It became patently obvious at the Fifth International Conference on Adult Education (UNESCO/UIE, 1998, p.5) that participants were significantly divided among themselves in terms of their ideologies, philosophies and value systems concerning genuine economic activity and the human endeavours that should be classified in this arena. Barquin (1998, pp.49–53) made this assertion.

Foreign investment and innovation

There are also concerns that investment in production facilities abroad generates spillover benefits, particularly in innovation, technology and research and development, which are then captured by the host country and lost to Australia. Similarly, it has been argued that production abroad can result in a transfer of some knowledge-based skills to the host country and that the advantages stemming from these skills are then lost to Australian firms.

While these arguments may have some validity, it also needs to be kept in mind that investment overseas by Australian multinationals is often undertaken to obtain access to new technologies, production techniques or marketing strategies which would otherwise be difficult or costly to obtain. There is no clear evidence to support the argument that there is a net loss to Australia.

DIST (1998) sums up this aspect of globalisation by asserting that, while investment abroad may have some negative impacts in terms of employment, taxation, exports or innovation in Australia, the advantages accruing to firms are likely to substantially outweigh these costs. Ultimately, the health of the economy as a whole will depend on our ability to foster efficient, internationally competitive industries.

Conclusions

It is clear from the above that there is much debate surrounding the concept of globalisation and its potential benefits and detrimental effects. VET cannot escape its responsibility to engage constructively in these debates. Is there a curriculum or a methodology that does not have philosophical and political overtones and social implications? Are there significant ramifications for VET and its management structures and decision making processes stemming from the process of globalisation? Do the pressures for greater articulation of education, for a wider variety of providers of VET, for entrepreneurial initiatives, for the international outreach of Australian education, for a greater degree of grass-roots control of education, impact significantly on the whole divers arena of VET? If the answer to these questions is in the affirmative, then VET must contribute positively, strongly, yet with an open mind, to such debates. The implications for VET of globalisation are dealt with more fully in the next chapter.

Implications of globalisation for VET

Communication evolution and information based economies

THE EVOLVING GLOBAL economy is based on a number of factors (Herr, 1990): decreasing transportation and communications costs, new political structures and economic alliances (such as the European Community, North American Free Trade Agreement, the Asian Pacific Economic Co-operation), homogenisation of tastes influenced by media and travel, and the communication revolution that has occurred in the past two decades. The most important influence is the emergence of flexible, information-based technologies (Carnevale, 1991). Profound economic, social and technological changes are creating new market standards (productivity, quality, variety, customisation, convenience, timeliness) and integrating producers and consumers through the communication revolution into networks for delivering goods and services globally or locally. It is essential that VET be thoroughly integrated into the world of work so that it can respond to the changes with flexibility and immediacy (ANTA, 1998; Allard, 1998).

Many organisations are now emphasising closely integrated work groups, teamwork, and shared information. The need for certain types of workers is being reduced or eliminated. At the same time, freer movement of some workers across national borders is escalating. Herr (1990) suggests that some workers engage in 'electronic immigration'—interacting through telecommunications with their employers in other countries.

It is not hard to find examples of the ways that technical developments are said to support this view. In 1950, only five countries had regular television service, but by the late 1970s there were 400 million television receivers in 138

countries. Additionally, it is estimated that the number of television sets worldwide has increased at least 10 per cent in the four years since the last statistics were published (Mowlana, 1986). Again, it took 38 years for 50 million people to tune into radio; the personal computer took 16 years to reach 50 million; the TV took 14 years to reach 50 million viewers; but once the Internet was opened to the general public, it took only 4 years to reach 50 million people (Telstra, 1998).

Another way in which the world is said to be increasingly becoming a borderless world is through the use of computers linked to the Internet. A classic example of this phenomenon is provided by the events of 1989 when the rest of the world that was linked to the Internet were able to receive immediate reports of the Chinese government's use of troops against the student protesters in Tiananmen Square from students linked to the Internet at Beijing University.

This perspective suggests to many that the use of new information technologies has profound implications for the exercise of state powers of censorship and control of information. (Cunningham et al 1997)

Implications for VET of information technology

The implications of these developments for information technology in teaching are addressed by the University of Alberta's Senate Task Force on Technology and Learning. That task force observed that student learning styles and needs are highly individualised. Universities are facing new challenges as they attempt to assess and meet growing demand for full and part-time, distance and remote learning opportunities; internationalised curricula and study opportunities; work-based study and ongoing professional development; and special needs of disabled students. Interest in distance learning particularly is growing, and post-secondary institutions and the private sector are entering the market in increasing numbers. The resulting 'mobility' of students is placing renewed emphasis on quality and suitability of the institution's programs to attract students.

Societal needs are also changing, bringing increased needs for lifelong learning and learning on demand. There are increasing pressures to provide affordable access for more students to post-secondary education.

This challenge can be met by telecommunications and information technologies. (University of Alberta, 1995)

Feeny (1998), Vice-President of Templeton College, Oxford University, and Director of the Oxford Institute of Information Management, asserts that from his research on the interactions between business strategy organisational design and information technology that:

- the sort of global/virtual working to which many corporations now aspire requires a holistic overhaul of management processes, not a patchwork approach
- the electronic communication systems at the heart of new processes need a framework of protocols and facilities if they are to convey meaning rather than data
- genuine cohesion and understanding of goals, strategy and culture are even more important when working virtually or globally–and even more difficult to achieve. Without these insights the corporate email system is more likely to become the corporate rumour mill than the enabler of global management. With proper attention to these areas information technology (IT) can truly be an enabler of global management at the operations and control levels.

Massey and Zemsky (1997) make two observations with respect to IT-based teaching. These are:

- The demand for IT-based teaching and learning programs will grow substantially, probably exponentially, over the next decade.
- IT will change teaching and learning profoundly, no matter what the response of traditional higher education institutions. If traditional colleges and universities do not exploit the new technologies, other non-traditional providers of education will be quick to do so.

The Australian scene

Statistics demonstrate that Australia is fast becoming an information society. For example, we have personal computer and Internet take-up rates which are among the highest in the world. Commentators on the future expect that more and more people, equipped with online technology, will work for themselves rather than be employed by larger organisations. This has significant implications for the delivery systems of VET. The effective manipulation of information in electronic databases via the Internet and other electronic means of communication will be fundamental to their business operations.

Information technology is expected to drive sustained economic and employment growth into the 21st century. Australia, with its high levels of literacy, usage of computers and advanced telecommunications infrastructure, is well placed to capitalise on this phenomenon (ANTA, 1998).

The skills and knowledge of the workforce are key factors in the international competitiveness of enterprises and their workforce and in national economic growth and productivity. Knowledge based occupations and industries are the fastest growing and best remunerated. They call for new and different skill mixes in their workforce, and particularly, proficiency in information and communication technologies. It is crucial that vocational education and training equips people with the knowledge and skills necessary to meet these demands (ANTA, 1998).

The significance of the need for training in information technology is given by the recent research (ANTA, 1998, p.6) that addressed the use of the web in business. Its findings are given below:

- Thirty-five per cent of businesses with a web presence claimed the site was significant to their business, 36 per cent claimed it was too soon to tell.
- Less than 20 per cent of enterprises with web sites believe they have achieved a return on investment greater than 10 per cent of their investment.
- Service sectors, in particular banking, communications and education, have been early adopters of Internet technologies.
- By the end of 1998, it is expected that most of the top 1000 businesses in Australia will have an online presence.
- Nearly $4 million was spent on online advertising in 1997 and the total spending is expected to triple in 1998.
- More than 1000 companies can be classified as web developers in Australia. Many also carry out CD-ROM development and Internet access provision.
- In 1997, there were 1.5 billion electronic transactions worth $16 trillion dollars.
- In February 1998, $1.6 trillion worth of transactions took place.
- Out of some 1.6 million Internet users in Australia at the start of 1998, 1.09 million were commercial Internet users.
- Eleven per cent of all businesses have a web presence.

- There were 54 800 active business web sites in January 1998. The market size has doubled since late 1996.
- Online purchasing volumes by Australians have more than tripled over the past 18 months, reaching a total of $55 million.
- Over 80 per cent of firms predominantly use Internet access for email and business research. Electronic commerce (EC) was cited as an application by less than 5 per cent of enterprises with Internet access.

With respect to the TAFE use of the web considerable information is available on WWW.edna.edu.au/EdNA/ also on WWW.otfe.vic.gov.au/links/index.htm. A full description of the Virtual Campus being developed in Victoria is given on http://www.otfe.vic.gov.au/sprd/cmu/projects/virtual_campus.htm. These sites reveal an increasing use by TAFE of the web for delivering its programs.

However Leach (The Australian, 9/6/98, p.40) reports that:

> *While Australian companies understand the benefits of having an information technology-literate staff, few are prepared to invest in training.*

The National Centre for Vocational Education Research is seeking to enhance the use of information technology for effective decision making within VET, both nationally and internationally, by information dissemination through its web site. It sees the dissemination of research findings as playing a vital role in responding effectively to the increasing processes of globalisation on the Australian economy (Robinson and Hayman, 1998).

While worldwide evidence is available to show that there is indeed a communication revolution around the globe, and Australia is involved in it, it would appear that within Australia sufficient emphasis is not being placed on the training needed to meet the challenge of this revolution.

Internationalisation of the curriculum

Globalisation bears with it significant implications for the content and structure of learning programs designed to develop people for effective and efficient performance within the world of work. Some of these programs will also need to provide recurrent vocational learning to meet the needs for changing competencies required for a particular job, or for chosen or enforced changes in career paths resulting from restructuring within the economy or for

changes stemming from the mobility of the work force within the global economy. Relevant curricula within VET must, therefore, be internationalised.

Bremer and van der Wende (1995, p.10) define international curricula as:

> *Curricula with an international orientation in content, aimed at preparing students for performing (professionally/socially) in an international and multicultural context, and designed for domestic students and/or foreign students.*

Walley (1997) claims that a successfully internationalised curriculum leads to students' intercultural competence developing out of both an awareness of other cultures and perspectives and an awareness of their own culture and its perspectives.

The curriculum, employability and life-long learning

One of the most significant impacts that globalisation has on the curriculum is its need to develop in the learner the knowledge and skills for 'employability' as well as for 'employment'.

President Jacques Chirac (1995, p.2) of France emphasised this new concept when he said:

> *Above all, we need to invest in people, allowing each and every worker access to lifelong vocational training ... We must learn to replace the concept of a job for life by that of* ***employability****.*

The United States, in recognising that the new economic order is a global one, has emphasised in its National Education Goals No. 3 and No. 5 that among the essential goals of education is that of preparing people for further learning and productive employment in the modern global economy.

The Government of the Province of British Columbia, Canada, (British Columbia, 1996) has stated in its evaluation of the VET system that a number of forces have been identified which are challenging the VET system's ability to develop a highly skilled workforce responsive to industry's needs. Among these forces it nominates globalisation and states that trade liberalisation and international competition for local jobs is compelling workers to enhance their 'employability' skills. The response to these demands are seen as improving relevance and quality in the VET system by developing a relevant training system that promotes lifelong learning and is responsive to the needs of both

employers and employees, and increasing the flexibility of the system in terms of delivery.

The Canadian Government, through its Industry Training and Apprenticeship Commission, asserts that the concept of an effective system of industry training and VET includes multiple entry and exit points to enable workers and learners to participate in programs in a proactive and 'as needed' mode. It recognises the need to look at flexible ways of working with industry to provide opportunities for workers to participate in continuing education and training at work or at least 'closer to home'. (ITAC 1998).

Knowledge, skills and attitudes required by globalisation

Many educational thinkers are now recognising that the new competitive framework requires a broader set of skills; 'hard' (technical) and 'soft' (interpersonal and communication) skills are equally important (Carnevale, 1991). The skills identified by a number of authors (Carnevale, 1991; Herr, 1990; Rhinesmith, 1991a, b, 1992) include managing information, resources, and relationships with people as well as self-management. The starting point is basic skills: reading, writing, computation, and, most important, ability to learn continuously throughout life. In addition, 'global' workers need flexibility, problem-solving and decision-making ability, adaptability, creative thinking, self-motivation, and the capacity for reflection.

Lawrence (1998, p.66) claims that the implications for education systems of globalisation are critical, since educating for 'jobs' is today increasingly challenged by the need to build human capacity, not only for employability, but also for broader lifelong learning as well as for "adaptive and 'coping' livelihood strategies in a fast-moving and complicated world".

It is also recognised that even if workers do not themselves change their place of employment, they will nevertheless deal with people from other nations in their own workplaces or electronically. In the multi-cultural society of Australia, this is patently true. Dealing with other people in a diverse local as well as international context requires intercultural communication, teamwork, negotiation, conflict resolution, as well as complementarity—the ability to facilitate the work of others (Herr, 1990).

As companies recruit, select, train, and promote on a global scale from a global labour pool, workers need, in addition to a set of skills, a global mindset (Rhinesmith, 1992). People with global mindsets have the ability to look at the broader context, accept contradiction and ambiguity, trust processes rather than structure, value diversity and teamwork, view change as opportunity, and strive for continuous self-development.

Herr (1990, p.157) recognises a number of psychological issues for which workers must be prepared in the face of potential mergers, downsizing, relocation, and constant change. He claims that 'adjustment' is the key word: helping people assess the meaning of work, prepare for retraining, cope with uncertainty, and possibly deal with a move to a less satisfying and less well-paying job for which life rewards and satisfaction will need to be found in roles and opportunities outside the work force. Those who relocate will need help in adjusting to living and working in a different culture, as well as helping their families make the transition—a new dimension of the work-family issue. This is true of every migrant worker within the Australian society.

Another dimension of this change in attitudes demanded by globalisation is presented by Zwerling (1992). He asserts that because traditional assumptions about career development will pertain only to a few workers, a curriculum that centers on the generic skills needed at different career stages is essential. He presents the proposition that the best liberal education may come to be seen as occupational education and that the best occupational education may be seen to be liberal education.

Courses in many vocational areas are being revised to address the challenges of the global economy. Canada is promoting its new course in *Global Entrepreneurship* rather than traditional entrepreneurship. Maglen (1994) asserts that vocational education and training must change focus and emphasise a dynamic perspective that stresses generic skills, adaptability, and problem solving. Lavoie (1998) argues for the Canadian economy that although there has been a trend towards high-skilled workers in Canada, the pace of this trend is slowing down due to a shift in the labour market adjustment strategy towards a supply-push orientation induced by a narrow labour shortage vision. She claims that, in the context of globalisation, a 'high-skills path' throughout the economy should be fostered. Gott (1989) sees both procedural and strategic knowledge as being important, with emphasis now being placed on strategic knowledge.

Some of the characteristics of work in the new economy also have implications for career development (Carnevale, 1991). Managers are becoming brokers/facilitators. There are more technical specialists, more lateral entry, and shorter, flatter career ladders. Instead of the old-style division of labour into discrete tasks, job functions are converging, and work teams are beginning to consist of individuals who alternate among expert, brokering, and leadership roles. Rewards are tending to be based more on the performance of teams and networks. Individualism has changed current notions of social justice, which is seen today less in terms of an equal distribution of material assets, and more in terms of equal opportunity to access knowledge, skills and public goods.

Another example of the impact of globalisation on the curricula of VET in Australia is the recent decision by Australia's engineering profession to review its education for engineers. It is addressing the question of how to change the culture of engineering to meet contemporary needs for sustainability and environmental protection. Recommendations have been made from professional and academic bodies that it should be more outward looking and capable of producing graduates to lead the profession in its involvement with the great social, economic, environmental and cultural challenges of our time. Globalisation, information technology, environmental sustainability and biotechnology are seen as the big issues facing today's engineers (Richardson, 1998).

Another consequence of the internationalisation of VET is the need for a renewed attack on the general versus vocational divide and sectoral barriers in post school education, and even earlier.

Staff development to address internationalisation

The success of VET learning programs is highly dependent upon the effectiveness of teachers and trainers engaged within those programs. Therefore, there is a great need for the provision of effective teacher training and trainer-training programs. For those whose primary occupational responsibilities are not training, but who nevertheless have some responsibility for training, programs to assist them with these training responsibilities will need to be delivered through strategies that accommodate the other demands and commitments that such people have within their occupations. The need for

teaching/learning strategies to adopt a methodology of internationalisation is enunciated by Maidstone (1996, pp.95–103).

The world scene

An International Round Table held in 1997 and supervised by UNESCO/UNEVOC, addressed the issues related to technical and vocational teacher training from three dimensions:

1. The new technological, economic, political, social and educational developments that have taken place in the past ten years and their impact on technical and vocational education;
2. The implication of these developments for technical and vocational education, both formal and non-formal;
3. The ramifications of these developments for technical and vocational teacher education.

The following were seen to be significant implications for technical teacher education:

- the need to keep teachers relevant to the contemporary world of work
- the need to ensure that only persons with appropriate motivations and commitments become vocational teachers and trainers
- increasing the status of technical and vocational education teachers
- increasing the wages of technical and vocational education teachers
- providing for world of work experience for technical and vocational education teachers
- improving the selection criteria and procedures for technical and vocational education teachers
- ensuring the contemporary relevance of the knowledge and skills of technical and vocational education teachers
- establishing a career path for technical and vocational education teachers.

NBEET (1995, p.3) makes the following observation concerning globalisation and its impact on education:

> *It is evident that the new global society that will be emerging will have new priorities, new partnerships and new articulations. There is absolutely no doubt that the priority of this new global society will be education of a type that both passes on the existing stock of knowledge, skills, values and experience that have*

been built up over the years and builds upon it. At the same time, there will be the need for the society to educate people in ways which may enable them to adapt to the rapidly evolving info-technological era and the universal inter-dependent socioeconomic and political framework.

It is becoming increasingly evident that there is a transition occurring in work education the world over that must impact significantly on the professional development of VET teachers and trainers.

The Asia and Pacific Region

Qureshi (1997, p.5) observes that there is a recognition in the Asia Pacific countries that in the end only technological innovations can deliver real gains in productivity as productivity comes essentially from higher-skilled workers, from good management and, ultimately, from better education systems.

He maintains that the following are current trends in VET in the Asia Pacific Region:

- *a growing collaboration between technical and vocational education and industry and the market for updating curriculum, equipment and facilities*
- *ever greater realisation in the countries of using the new information technologies to improve the efficiencies and the outreach of the VET systems*
- *continual updating of the content of the VET curricula for technologies of the future*
- *pronounced emphasis on the interfacing of education and enterprises in curriculum planning and implementation*
- *provisions of contextual learning, entrepreneurship and life-long learning in VET courses*
- *greater emphasis on preparing a multi-skilled work force and providing the job experience required for upskilling*
- *creating mechanisms for the recognition of prior learning and credit transfer*
- *introducing competency-based training and promoting retrainability*
- *tracing for job clusters and for transfer to jobs from related areas in business and industry*

Staff development in Australian VET

The context of staff development for VET in Australia in 1998 is one where a number of significant reforms are being made to the provision of VET,

including initiatives related to the development of an open training market, the introduction of the National Training Framework and the use of training packages by recognised training organisations.

The training of technical teachers/trainers again assumes a dimension which is both vulnerable and crucial when it comes to changing existing practices and structures so that they can remain responsive to the changing context of the work place. The most critical component of this new context is related to trying new philosophical beliefs that employ in larger measure the fast evolving revolutionary new technologies to solve pedagogical problems.

In the 1990s, a number of staff development initiatives have been developed at both state and federal levels. Examples of these programs include: *Implementing CBT, CBT in Action, AVTS Professional Development, National Transition Program,* various National Staff Development Committee initiatives and, more recently, *Framing the Future.* Many of these programs have been the subject of evaluation studies (for example, Harris, 1993; Radcliffe, 1994; Australian Competency Research Centre and Barton Institute of TAFE, 1995; Kelleher and Murray, 1996).

Most of the early staff development initiatives focussed on awareness raising and skill development. 'Train-the-trainer' type models predominated. Generally, evaluations revealed that these approaches were too generic and had limited impact (Simons, 1997). Evaluations have also shown the potential of action learning approaches to have greater impact on organisational change and participant development (Kelleher and Murray, 1996). Issues with this approach still remain, however (Boydell and Leary, 1996; Perkins, 1997).

Recent work undertaken by the Centre for Research in Education, Equity and Work (CREEW) in collaboration with the NCVER on behalf of ANTA (1997) highlights that staff development is not yet sufficiently appreciated, planned or implemented as a strategic activity. It points to the significant challenge offered by the management of change and the need to use staff development in a strategic manner to facilitate innovation and change within the VET sector (Harris and Simons, 1997). A national study funded by the National Research and Evaluation Committee is at present being undertaken by CREEW within the University of South Australia to determine the role of staff development for teachers/trainers in VET public and private providers.

Other important pieces of research into VET staff development needs that have been undertaken in the past two to three years within Australia are:

- NCVER series, *Review of research*, NCVER, Leabrook, South Australia
- Victorian Association of Directors of TAFE Institutes (VICAD), *Entry level competency standards for VET teachers/trainers project*. Stage 1 developed competency standards and a linked qualifications framework in a form consistent with the national framework for the recognition of training. Stage 2 is developing assessment guidelines which, with the competency standards, is expected to receive national endorsement as an enterprise training package
- research undertaken by the Australian Centre for Industrial Relations, Research and Training examining teacher employment contracts and educational outcomes (Callus, 1997)
- outcomes of studies exploring the impact of the open training market on teachers' work (Kell, Hill and Blakeley, 1998) and professional needs (Choy, Imhoff and Blakeley, 1996)
- the recently completed review and revision of the national workplace trainer and assessor standards (Gillis, Griffin, Falk and Catts, 1998)
- research currently being conducted at Charles Sturt University which is examining how VET practitioners learn how to use competency based training, and the development of a model to guide future staff development initiatives (Hill, Smith et al., 1998)
- the *Framing the Future* program and its continuing evaluation (Field, 1997)
- the recent Victorian study commissioned by the Office of Training and Further Education on trends in recruitment and maintenance of the VET workforce (ACRE/CEET, 1998).

The Victorian Association of Directors of TAFE Institutes (VICAD, 1998, p.2) makes the following observations with respect to the staff development needs for VET:

> *The role and character of 'teaching' is changing as the VET sector expands to formally include a range of providers beyond the TAFE Institutes, as the VET sector broadens its brief to include new areas of training and new delivery approaches. Moreover, the organisational structure of VET in Victoria is also changing and this is having ramifications for the role and functions of 'teachers' and 'trainers' within that system ...*

As a consequence VICAD has developed the competency standards given in the table on the following page.

Tinkler et al. (1996, p.104) has made a significant analysis of the skills needed by teachers/trainers for the Australian scene with respect to the use of technologies in VET. They state that:

> *With online services set to become the most common platform, TAFE teaching staff will need a range of training in:*
>
> - *use of email and bulletin boards for simple communication with students*
> - *use of file transfer to send documents and receive assignments*
> - *ability to participate in live real-time computer conferencing for tutorial purposes*
> - *use of authoring packages to design materials that can be stored and made available on an electronic information service for students and, where appropriate, to ensure those materials are as interactive as possible*
> - *ability to advise students on how to access various online data bases*
> - *ability to guide students towards the development of a range of skills in searching for, analysing and presenting information in a range of mediums*
> - *changing the relationship with students from 'expert information source' to 'information navigational guide, learning strategist, and knowledge analyst' as teaching moves from a predominantly didactic model to one based on dialogue and co-learning.*

The research undertaken for NBEET in 1995 (Tinkler et al., 1996, p.113) showed that developments in TAFE had only shifted marginally over the 1991 assessment that was made by Mitchell et al. (1991).

Competency standards for VET practitioners

Functional Areas	Units of Competency					
Needs assessment	1. learning needs of individuals and groups	2. Assess client needs for programs and services	3. Develop learning plans for individuals with special learning needs			
Learning facilitation	2. Prepare for training	3. Deliver training	4. Plan for teaching and learning	4. Facilitate individual and group learning	4. Manage flexible teaching and learning programs	4. Integrate technology in teaching and learning
Competency assessment	3. Plan and review assessment	4. Develop assessment tools	5. Conduct assessment in accordance with an established procedure	5. Establish the assessment system	5. Manage the assessment system	
Program design and evaluation	4. Design and customise learning programs	5. Develop and customise learning resources	6. Evaluate learning programs and resources	6. Design the assessment system		
Industry community relations	5. Provide consultancy services	6. Market and promote programs and services	7. Consult on organisational training and development strategies	7. Provide programs and services within an international context	19. Review and promote training	
Program & project co-ordination	6. Co-ordinate program delivery	7. Contribute to quality improvements in client service	8. Undertake research in vocational education and training	8. Manage projects		
Professional practice	7. Critically examine teaching and learning practice	8. Provide educational leadership	9. Work in a team	9. Maintain professional competence		

Source: Standards and Qualifications – Volume 2, VICAD

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Conclusions

DEETYA (1995) sees the responsibility of VET to address globalisation in the following ways:

- It must be characterised by considerable flexibility. This flexibility must relate to its curricula, its delivery, its methodology, its availability, and its access.
- It must be delivered, in some form or another, across a wide range of formal and informal learning institutions, including general education, higher education, non-formal learning outlets, community education, human resource development entities within enterprises, government and non-government organisations, and private providers.
- There must be increasing articulation among these sources of learning, with a maximum of recognition among them of relevant learning and experience gained from whatever source or appropriate experience.
- VET must embrace fully the concept of life-long learning and recurrent education and structure its management, planning and delivery strategies in terms of this mandate.
- Its basic and on-going educational provision must develop and reinforce positive adjustments to economic change, cultural diversity, changing competencies, mobility in employment, and diversity of career.
- It must address core competencies to the extent necessary to strengthen the employability of learners as well as enabling them to be effective and efficient in specific employment.
- It must contribute significantly to the development of attitudes necessary to the co-operative and harmonious functioning of the workplace, and to the commitment by people within the work place to self-development and personal empowerment.
- It must support, to the extent possible, the competencies required for a realistic level of self-direction among the diversity of learners.
- It must provide for the development of entrepreneurial knowledge and skills relevant to the global arena.

After considerable discussion and debate at the Fifth International Conference on Adult Education, several delegations adopted the following statements as being an essential response by VET to globalisation.

To ensure that progress in human development occurs as a result of effective education for the world of work, it is proposed that the following be implemented:

- *Comprehensive career guidance be provided, as much as is reasonable and possible, to citizens as a life-long support for effective work-related decision making.*
- *General education assume a responsibility for an effective orientation to the world of work and for the development of generic concepts and attitudes that are essential to the transferability of knowledge, attitudes and skills in the learning of occupational-specific competencies.*
- *Context-relevant research that supports the application of science and technology to the world of work be supported by both government and industry. Such research must also address the multifarious issues of environmental protection.*
- *Education for the world of work engender in its learners attitudes of responsibility for the environment and cultural heritage, and the commitment to practices that support this area of human responsibility.*
- *Irrelevant barriers to the access of all levels of education that are based on discriminatory factors such as, sex, race, creed, class, etc. or on spurious measures of academic ability and potential, be removed in order to support the development of the full potential of the individual and to allow, to the extent possible, for a seamless career path.*
- *Those who have withdrawn from the world of work for prolonged periods of time to fulfil other responsibilities, such as parenting, be provided, to the extent possible, the adult education that enables them to re-engage in work without penalty.*

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- *Competencies be developed that are necessary to support effective entrepreneurial initiatives, in whatever context or arena. These may also include competencies in supervision and management for appropriate people to assume leadership roles in social partner organisations and NGOs.*
- *Articulation among educational institutions should facilitate the recognising and crediting of relevant learning and experience from all strands of education. Such articulation needs also to address the issues that support an increased international recognition of a person's learning and experience.*
- *The non-formal sector of the economy must be provided for through the application of strategies that enable that sector to engage in such education.*

- *Teaching/learning strategies be implemented that are student-centred and appropriate to the particular circumstances of the learner.*
- *Curricula for education for the world of work must be continually developed and revised in order to ensure relevance and life-long occupational opportunities and employability.*
- *Selection procedures for teachers and trainers within the world of work be improved and that these professionals be given thorough and continuing professional development in order to fulfil their responsibilities to the highest standards.*
- *NGOs be given full support by governments and industry to assume increasing responsibility in adult and continuing professional education.*
- *Policies must be developed by decision-making authorities and legislation implemented by governments at all levels that support life-long adult and continuing education for the world of work.*
- *Authorities, including governments and ministries at the various levels within a nation, co-ordinate their responsibilities for education for the world of work.*
- *Every effort should be made by all relevant parties, such as NGOs, enterprise, governments, etc. to work towards the adequate financing of adult and continuing education for the world of work.*
- *All relevant entities should aim for a fair and just distribution of wealth within the world of work, without inhibiting individual initiative and personal freedom.*
- *All education for the world of work must be sufficiently comprehensive to contribute to the development of the learner as a mature, autonomous and socially responsible person; in addition to its primary responsibility of developing occupationally-specific competencies. (Hobart, 1998, p.22)*

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This review of research on vocational education and training is one of a series of reports commissioned to guide the development of future national research and evaluation priorities.

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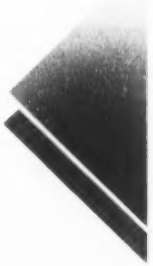

ISBN 0-87397-515-4